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8
9 IN THE UNITED STATES DISTRICT COURT
10 FOR THE DISTRICT OF ARIZONA

11 United States of America,
12 Plaintiff,

13 v.

14 Preston Henry Tolth,
15 Defendant.

No. CR-23-08043-PCT-DLR

**NOTICE OF INTENT TO
USE EXPERT TESTIMONY RE:
HISTORICAL CELL SITE DATA**

16
17 Pursuant to Federal Rule of Criminal Procedure 16(a)(1)(G) and Federal Rules of
18 Evidence 702, 703, 704, 705, and 1006, the United States of America provides notice of
19 its intent to use expert witness testimony during its case-in-chief and/or rebuttal.

20 **Special Agent Justin Swartz, FBI Cellular Analysis Survey Team (CAST)**

21 Justin Swartz will offer opinion testimony based upon his training, experience, and
22 education as set forth in his curriculum vitae (CV). To the extent he has authored reports,
23 his testimony is expected to be consistent with those reports and to include all facts,
24 observations, and conclusions in those reports.

25 The government intends to offer the expert opinion of Justin Swartz, an FBI Special
26 Agent (SA) and certified member of the FBI's Cellular Analysis Survey Team (CAST).
27 SA Swartz will testify regarding historical cell site and other data associated with cellular
28 telephone number used by the victim E.B. SA Swartz's report and analysis, and the
underlying cellular telephone records from Cellular One on which he relied, were

1 previously produced to the defense and are incorporated by reference into this notice. SA
2 Swartz's CV, detailing his education, training, and experience, was also disclosed.

3 **A. Expected Testimony**

4 At trial, SA Swartz will describe the role of FBI CAST in criminal investigations,
5 which includes determining where phones have been or are located. SA Swartz will
6 explain that FBI CAST members locate phones through historical cell site analysis.
7 Evidence about where a cellular device was located at a particular time can be used to
8 inculcate or exculpate a suspect, locate a missing fugitive, or locate a missing person.

9 SA Swartz will explain how a cell phone works, including how a cell phone sends
10 signals back-and-forth with cell towers. Cell towers consist of a tower location plus a
11 side/sector/azimuth on that tower location (together, a cell site), as demonstrated in the
12 diagram produced at Bates 2547. When a cell phone attempts to communicate with another
13 device, the cell phone sends a signal to a cell site, which forwards the communication to
14 the cellular network. The network then routes the communication to the intended recipient
15 device. When a cell phone attempts to send or receive a call or text, the cell phone chooses
16 which cell site to communicate with, choosing the cell site that provides the best signal.
17 The term "service area" refers to the geographic area where a phone has to be located to
18 communicate—e.g., make a call or text through a particular cell site. Cellular service
19 providers generally design their network to have slightly overlapping service areas between
20 cell sites, designed to provide continuous service as a cellular device moves
21 geographically. The density of tower locations generally depends on the population density
22 of the service area, meaning that more urban areas will have more cell towers, whereas
23 more rural areas will have fewer cell towers. In rural areas, a cell tower may provide
24 several miles of coverage.

25 SA Swartz will testify about call detail records, which consist of data collected by
26 service providers during the normal course of business, including the date and time of a
27 record, the type of communication, the identity of the cell site that was used to make the
28 communication, and information associated with initiation and receipt (i.e., to/from).

1 SA Swartz will describe the historical cell site analysis process. SA Swartz will
2 explain that the call detail records document which cell site served the target cell phone at
3 a certain time. He will further explain that the cellular service providers produce a list of
4 their cell sites and their locations. When used in conjunction, the call detail records and the
5 list of cell site locations illustrate an approximate location of the target phone when it
6 initiated contact with the network. SA Swartz will explain that while this can be done by
7 hand, the CAST member will use software to illustrate these records on a map, plotting the
8 location of the cell site used at a particular time by the target phone. For example, in the
9 diagram produced at Bates 2548, the cell towers are represented by black dots, and
10 information for the call detail record is located in the left-hand side of the map (an incoming
11 communication from 505-675-9525, dated June 14, 2021 at 11:15pm, from cell site 2CC6
12 with sector/azimuth 120°). In this example, the call detail record shows that, at 11:15pm,
13 the cell phone associated with telephone number 505-809-8032 was located within the
14 service area of cell site 2CC6, notionally represented by the red wedge or “V.”

15 SA Swartz will testify that, for this case, he analyzed tower locations and call detail
16 records associated with one telephone number serviced by Cellular One, a service provider
17 servicing Northern Arizona and New Mexico.¹ SA Swartz will explain that he first created
18 a map of Cellular One cell towers in the Sweetwater and “Fours Corners” area of Northern
19 Arizona and New Mexico, and superimposed location data he received from the case agent,
20 specifically the victim’s residence location. (This map is Bates 2549.)

21 SA Swartz will explain that he illustrated call detail records and cell site locations
22 for the victim’s phone on June 14, 2021, at approximately 11:14pm to June 15, 2021, at
23 approximately 4:02am. In summary, the call detail records show that the victim’s phone
24 interacted with four cell sites during that time. SA Swartz will opine that the data is
25 consistent with the victim’s phone traveling east across the Arizona/New Mexico border
26

27 ¹ FBI Special Dustin Drace will testify that the FBI obtained these records via search
28 warrant No. 22-4301MB (D. Ariz.) (Bibles, J.), and that the records were accompanied by
a Certificate of Authenticity signed by a Cellular One Records Custodian. Bates 438-39
(search warrant). Telephone number 505-809-8032 was subscribed to by victim E.B.

1 and then south towards Thoreau, New Mexico.

2 SA Swartz will also testify about steps taken by FBI CAST to review and validate
3 his work, which includes peer review of the analysis and report by another FBI CAST
4 member. The historical mobile device location analysis produced at Bates 2545-2550 was
5 peer reviewed.

6 **B. Bases and Reasons**

7 SA Swartz's opinions are based on his personal examination of the evidence,
8 considering his training, education, experience, and expertise as a certified member of FBI
9 CAST.

10 **C. Qualifications, Including Publications**

11 SA Swartz received a Bachelor of Science Degree in Electrical Engineering in 2010.
12 After joining the FBI, SA Swartz received specialized training in historical cell site
13 analysis, including: (1) a basic course on the fundamentals of historical cell site analysis,
14 including an introduction to call detail records and how cellular telephones and cellular
15 networks operate together; (2) an advanced course on historical cell site analysis; (3) an
16 advanced course on critical incident readiness, focusing on CAST analyses performed
17 under the stress of an emergency; and (4) four weeks of the FBI CAST certification course
18 which includes 40 hours of instruction from the Florida Institute of Technology on Radio
19 Frequency (RF) Theory and cellular networks including GSM, CDMA, UMTS, LTE, and
20 5G protocols; Classroom and hands-on training on the use of the Gladiator Autonomous
21 Receiver (GAR) for mobile drive testing; Instruction received directly from the cellular
22 providers and their engineers for each of the four major cellular carriers, AT&T, T-Mobile,
23 U.S. Cellular, and Verizon; and, legal training and instruction on expert witness testimony.

24 SA Swartz participates in ongoing, yearly training and recertification, which
25 includes receiving updates from cellular service providers on available data and
26 technology. His day-to-day responsibility of supporting criminal and national security
27 investigations ensures his continuing expertise.

1 Even before joining the FBI, SA Swartz received relevant on-the-job experience as
2 an Electronics Engineer for the Department of Defense (DoD), United States Air Force.
3 One of his jobs was to collect flight test data that included time, space, position, information
4 (TSPI) and radio frequency data, analyze this data to evaluate the performance of fighter
5 jet systems, and present this information to DoD decision-makers regarding development
6 and procurement decisions.

7 SA Swartz's CV, which more thoroughly details his education, qualifications, and
8 teaching experience was previously disclosed to the defense. SA Swartz has not authored
9 any publications to date, and is not receiving compensation for his testimony, aside from
10 his regular salary with the FBI.

11 **D. Prior Testimony**

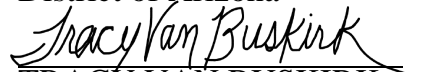
12 Within the past four years, SA Swartz has testified as an expert at trial in three cases,
13 which are set forth in his CV.

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15 

16 SPECIAL AGENT JUSTIN SWARTZ
17 FBI Cellular Analysis Survey Team

18
19 Respectfully submitted this 8th day of April, 2024

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21 GARY M. RESTAINO
22 United States Attorney
23 District of Arizona

24 
25 TRACY VAN BUSKIRK
26 ALANNA R. KENNEDY
27 Assistant U.S. Attorneys
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CERTIFICATE OF SERVICE

I hereby certify that on this same date, I electronically transmitted the attached document to the Clerk's Office using the CM/ECF System for filing a copy to the following CM/ECF registrants: Jane McClellan and James Rael, *Attorneys for Defendant*